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CLAIMS:

1. A system for treating combustion exhaust gas, which system comprising: a catalyst effective to promote oxidation of at least NO to NO₂; a filter downstream of the oxidation catalyst, which filter being effective to collect soot and hold it for combustion reaction with the NO₂ in the gas; a NO_x absorber downstream of the filter, which NO_x absorber is charged with solid absorbent; means for introducing intermittently a regenerant of the absorber, which means being effective to inject a NO_x-specific reactant upstream of the absorber; and, associated with and/or downstream of the absorber, a catalyst system effective to promote reactions of hydrocarbons (HC) and CO with O₂ to H₂O and CO₂ and to react NO_x to N₂.

2. A system according to claim 1, wherein the catalyst system is associated with the absorber.

3. A system according to claim 1, wherein the catalyst system is disposed in a separate bed downstream of the absorber.

4. A system according to claim 1, 2 or 3, wherein the NO_x absorbent comprises: (a) compounds of alkali metals, alkaline earth metal, rare earth metals and transition metals or a mixed oxide of any two or more thereof; and/or (b) zeolites, carbons and/or high surface area oxides.

5. A system according to claim 4, wherein the mixed oxide includes Ba-Cu-O, MnO₂-BaCuO₂, optionally including CeO₂, Y-Ba-Cu-O or Y-Sr-Co-O.

6. A system according to any of claims 1 to 5, wherein the catalyst system comprises vanadia/titania and/or one or more platinum group metal.

7. A system according to any of claims 1 to 6, wherein the injection means is arranged to inject the reactant upstream of the filter.

8. A system according to claim 7, wherein the injection means is arranged to inject the reactant upstream of the oxidation catalyst.

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9. A system according to any of claims 1 to 6, wherein the injection means is arranged to inject the reactant downstream of the filter.
- 5 10. A system according to any preceding claim, wherein the filter is catalysed.
11. A system according to any preceding claim, wherein the injection means is for ammonia, hydrazine, urea or aqueous urea solution.
- 10 12. A system according to any preceding claim including sensors, indicators, computers and actuators, effective to maintain operation within desired conditions.
13. A system according to claim 12, wherein a computer operates the engine in compliance with the European Stage IV emission legislation.
- 15 14. A diesel engine including a system according to any preceding claim.
15. An engine according to claim 8 which is a turbo-charged direct injection engine.
- 20 16. A process for treating combustion exhaust gas containing CO, hydrocarbons (HC), NO, O₂, soot and non-reactive gases, which process comprises the steps of: (i) catalysing oxidation of NO to NO₂; (ii) collecting soot on a filter; (iii) combusting the collected soot by reaction with NO₂ and possibly also O₂ left over after step (i); removing NO_x from the product of step (iii) by contacting a regenerable NO_x absorbent
- 25 with gas containing it; (v) regenerating the absorbent intermittently by injecting a NO_x-specific reactant upstream of the absorbent; and (vi) at least during step (v), contacting a catalyst system effective to promote reactions of HC and CO with O₂ to H₂O and CO₂ and to react NO_x to N₂ with the gas the product of step (v).
- 30 17. A process according to claim 16, wherein the reactant is injected into: (a) lean exhaust gas as generated by the engine or the product of a preceding step of exhaust treatment; or (b) gas made leaner when the NO_x-specific reactant is injected with air.

18. A process according to claim 16 or 17, wherein the NO_x-specific reactant is ammonia or hydrazine and is injected as such and/or as a precursor compound decomposable thereto *in situ*.

5 19. A process according to claim 16, 17 or 18, wherein the precursor is urea or aqueous urea solution.

20. A process according to claim 16, 17, 18 or 19, wherein the exhaust gas is the product of combustion of fuel containing less than 50 ppm w/w of sulphur.

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21. A process according to any of claims 16 to 20, operated in compliance with the European Stage IV emission legislation.